

## **ABSTRACT OF THE DISCLOSURE**

A breast electrode array and method of analysis for detecting and diagnosing diseases. In particular, the electrode array has a body, a plurality of flexible arms extending from the body, and a plurality of outer electrodes provided by the plurality of flexible arms, and a plurality of inner electrodes provided on at least one of the flexible arms and positioned partway between the body and the outer electrodes, and the outer electrodes and the inner electrodes are arranged on the arms to obtain impedance measurements between respective electrodes. Diagnostic methods based on homologous electrical difference analysis are also provided, utilizing the different topologies created by the inner and outer electrodes when taking impedance measurements.